

### **REMARKS/ARGUMENTS**

Claims 26-45, 51 and 52 remain in this application. Claims 26-45, 51 and 52 have been rejected by the Examiner under 35 U.S.C. 103(a). New dependent claims 55 and 56 have now been added.

### **§ 103 Rejections**

The Examiner has rejected claims 26-45, 51 and 52 under 35 U.S.C. 103(a) as being unpatentable over Feygin et al. (US 5,730,817) in view of Kinzie (US 6,136,132) either individually or in various combinations with Belanger, Jr. (US 4,721,543), Berman (US 5,071,503), Miller (US 3,827,625) and Richards et al. (US 6,161,604). The Examiner's rejections are respectfully traversed.

With regard to the Examiner's detailed rejection of claims 26 and 51, the Examiner stated that, "Feygin et al. does not disclose the selective deployment of a releasing agent on one side of the sheet. One of ordinary skill in the art at the time of the invention would recognize the advantage of preventing the waste material from undesirably adhering to the sheets forming the three-dimensional object. Kinzie discloses a method of making a three-dimensional object in which a release coating is applied to prevent undesired adhesion. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Feygin et al. to include selectively coating the top of each sheet with a releasing agent as disclosed in Kinzie to prevent undesired adhesion of the portion of the sheet comprising waste material to the portion of the sheet comprising a layer of the three-dimensional object." The reasoning for the rejection of independent apparatus claim 36 is similar.

In response, as mentioned in earlier-filed papers of record, the Applicant first wishes to point out that the Kinzie reference relates to cutting of a solid block into two

parts, processing the exposed surfaces, and re-bonding the two parts. Since Kinzie works throughout with a block of source material and a block of bonded slices, the bonding Kinzie refers to attachment of thick, rigid elements. As a result, the design considerations for attachment techniques are markedly different from those of thin-sheet stack construction such as disclosed by Feygin et al. This is clearly exemplified by the reference in Kinzie to the option of bonding by use of “pins, bolts or screws” (col. 12 lines 15-16). As a result, the Applicant respectfully submits that one ordinarily skilled in the art attempting to implement a thin-sheet model building system according to the teachings of Feygin et al. would not look to Kinzie for teachings of suitable bonding techniques.

Secondly, the Applicant wishes to point out that Feygin et al. does not in any way hint or suggest that selective non-adhesion would be advantageous. With regard to the adhesive, Feygin et al. simply states that: “The layers are bonded to each other with heat sensitive adhesives provided on one side thereof” (abstract), implying uniform adhesion over the entire area. Indeed, Feygin has no need for selective bonding techniques, since he teaches an alternative technique for facilitating detachment of residue material, namely, cross-hatching: “...*cross-hatching 82 is cut in the sheet 56 so the resulting three-dimensional object will have a volume of loosely bound material around its exterior created by layers of cross-hatched material. The loosely bound material can then be knocked or scraped off...*” (col. 5, lines 62-66; emphasis added). Since Feygin et al. explicitly teaches a technique for facilitating detachment of waste material, one ordinarily skilled in the art would have no motivation to seek an alternative solution as suggested by the Examiner.

Furthermore, the combination suggested by the Examiner would lead to highly undesirable results. Any application of a releasing agent to prevent adhesion around the

object would disrupt the binding between adjacent layers of the cross-hatched residue material around the object, thereby freeing tiny particles of confetti-like cross-hatched sheet material which could jam the machinery or interfere with the cutting ability of the laser.

Finally, it should be noted that the only example of a release agent mentioned by Kinzie is in the context of bonding based upon a volatile solvent. Such a technique would clearly be dismissed by one ordinarily skilled in the art as unsuitable for combination with the laser-cutting system of Feygin et al. which would be likely to ignite the solvent.

In view of the above arguments, the Applicant respectfully submits that:

- One of ordinary skill in the art would lack any motivation to modify the method of Feygin et al. to include the selective coating disclosed by Kinzie.
- Even if the system of Feygin et al. were modified according to the teachings of Kinzie as suggested by the Examiner, the resulting device would be unsatisfactory for its intended purpose.

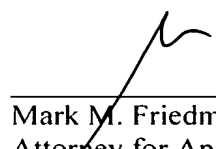
#### **Claim Amendments**

The Applicant takes this opportunity to submit additional dependent claims 55 and 56, depending from independent claims 26 and 36, respectively, which relate to additional features described in the specification but not previously claimed. Specifically, new claims 55 and 56 specify that the releasing agent is applied on at least one of the sheets over a majority of the area not included within the respective contour. This feature is supported by the specification as filed, and in particular, by the examples in which the entire area outside the contour is treated with releasing agent.

Appl. No. 09/581,990  
Amdt. dated 14 JAN 03  
Reply to Office action of 16 JUL 03

It is respectfully submitted that independent claims 26 and 36 and hence also dependent claims 27-35, 36-45, 51, 52, 55 and 56, are in condition for allowance. The Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



---

Mark M. Friedman  
Attorney for Applicant  
Registration No. 33,883

14 January, 2004